

INTRODUCTION

The City of Burbank Building Division sponsors the Student Design Competition each year in collaboration with Burbank Water and Power and the Burbank Recycle Center to provide an opportunity for high school students in the City to creatively explore the areas of building design, site planning, transportation, community services and redevelopment. The City departments involved in sponsoring this competition are composed of professionals who have many years of experience and understanding in these areas. The contest is an ideal opportunity for students to interact with City Staff in order to gain knowledge of and exposure to building design, construction, and basic City operations.

The competition mainly addresses the fields of architecture and planning, but is not limited to only those interested in those subjects. Students with interests in art, photography, environmental issues, graphic design, urban planning, local government, and computer design are also encouraged to participate. A wide range of media may be used to solve the design problem in creative ways.

The project focuses on design of a single family dwelling in a different topographical setting each year. Working with a house design encourages creative thinking and analysis of a familiar use and building type. It requires analyzing climate, materials, site circulation, the relationship of multiple functions, the massing of building forms and building aesthetics. Participants may enter as individuals or as a team.

CRITICAL DATES

October 19, 2009	Program Packets available
December 4, 2009	Deadline to submit registration form
December 2009	City Staff available for project reviews
January 2010	Site visits to schools

February 12, 2010

PROJECT SUBMITTAL DEADLINE

February 26, 2010	Selection of Winners
March 2010	Recognition Party - Certificates of participation and awards Presentation of awards at City Council Meeting (Dates to be determined).

THE PROGRAM

PROJECT DESCRIPTION AND REQUIREMENTS

You have been commissioned to design an energy efficient Single Family Dwelling which will serve as a residence for an artist or writer in a desert area such as Palm Springs. A home for an artist would have the same types of rooms as a standard house, but it would also include a room dedicated to be a studio or separate workspace.

There are **no** restrictions on the number, use, or size of the rooms in the house. Even though cities have regulations and restrictions that determine how close a building can be to the property line, how much area is allowed to be built on a site, and the maximum building height and building area in relation to the size of the lot, these restrictions will **not** apply to this project. This competition will be an exercise in creative expression of building design and site use.

THE ONLY DESIGN REQUIREMENT IS THAT THE HOUSE DESIGN ADDRESS ENERGY EFFICIENCY BY USING THE SITE'S SOLAR ORIENTATION, MAINTAINING THE MAXIMUM USE OF THE SUN'S HEAT AND PROTECTION FROM THE COLD NORTH WINDS, AND INTEGRATING RECYCLED MATERIALS, RAINWATER COLLECTION METHODS, AND COMPOSTING.

Applicants may receive assistance from those outside of the school faculty such as an architect, engineer or any person in a field related to design, but their name must be included on the application form as an ADVISOR.

The final presentation and submittal should clearly communicate how the house will be used and function based on the location of the rooms, the circulation throughout, and the relationship between indoor and outdoor spaces. This can be achieved by any or all of the following methods:

- Sketches, renderings, or perspective drawings
- Hand drafted or computer generated floor plans and exterior elevations, dimensioned to scale but not required
- Photos or magazine cut outs of building elements that would apply to the design
- Depiction of the house using paint, charcoals, pastels or as a collage of materials used in either an abstract or realistic way.
- Models or sculptures that would show the shape and massing of the house and could also be used to show room layout and relationships with walls and openings. This can be made of any material selected by the designer.

SUBMITTAL REQUIREMENTS

THESE ARE ITEMS THAT REQUIRED FOR SUBMITTAL. THEY SHOULD BE **MOUNTED** ON A MATTE BOARD, CARDBOARD OR FOAM CORE BOARD FOR BACKING:

1. Site Plan: Indicate how the house is oriented on the site with a North Arrow.
2. Floor Plan(s) of each level.
3. Elevations of the building's exterior as seen from all sides.
4. A sketch, rendering, or 3-D computer drawing that gives an overall perspective view of the house.
5. Magazine clippings or samples of materials.
6. Provide a brief written statement that specifies the program and explains how you have provided for your client's interests and in your design, and how the house addresses the issues of energy efficiency. This must be attached to one of the boards.
7. OPTIONAL: A foam core or cardboard model of the house situated on its site.

AWARDS:

A panel of judges from the Burbank community including architects, council members and executives of major companies will select the winners based on their interpretation of the project's:

- Design creativity
- Presentation quality
- How the project integrates recycled materials, rainwater capturing, composting and the use of energy efficient building design that addresses solar orientation, cooling/heating needs and wind/sun protection.

BWP-Recycle Center Environmental Scholarship (cash):

First Place	\$3,000.00 per team
Second Place	\$2,000.00 per team
Third Place	\$1,000.00 per team

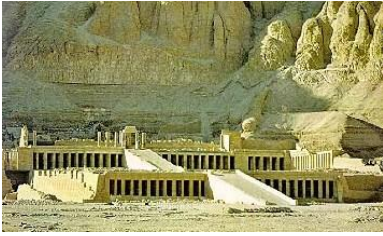
Participants will receive Gift Cards and Certificates of Participation.

Trophies will be presented to the first, second and third place scholarship winners at a meeting of the City Council.

This information is available for download from our website: www.ci.burbank.ca.us/index.aspx?page=573

DESERT ARCHITECTURE

Creating shelter in a hot, arid and inhospitable climate has been a challenge faced by cultures for thousands of years. The most famous desert structures still standing are the temples and pyramids of ancient Egypt. Although these buildings were constructed as palaces or burial sites for royalty and not as homes for the average citizen, they still provide great insight into design methods that are more effective in a desert environment.



In the American Southwest, many early desert structures were constructed from adobe clay and boulders. Dwellings were often clustered into a group or were nestled into a hillside or rocky canyon wall.



The natural topography of the desert and the challenges it poses have inspired many artists, painters and architects. In the latter part of his career, architect Frank Lloyd Wright built a studio in Scottsdale, Arizona, that he named Taliesin West (left). The house was built by Wright's students from natural materials taken from the site.

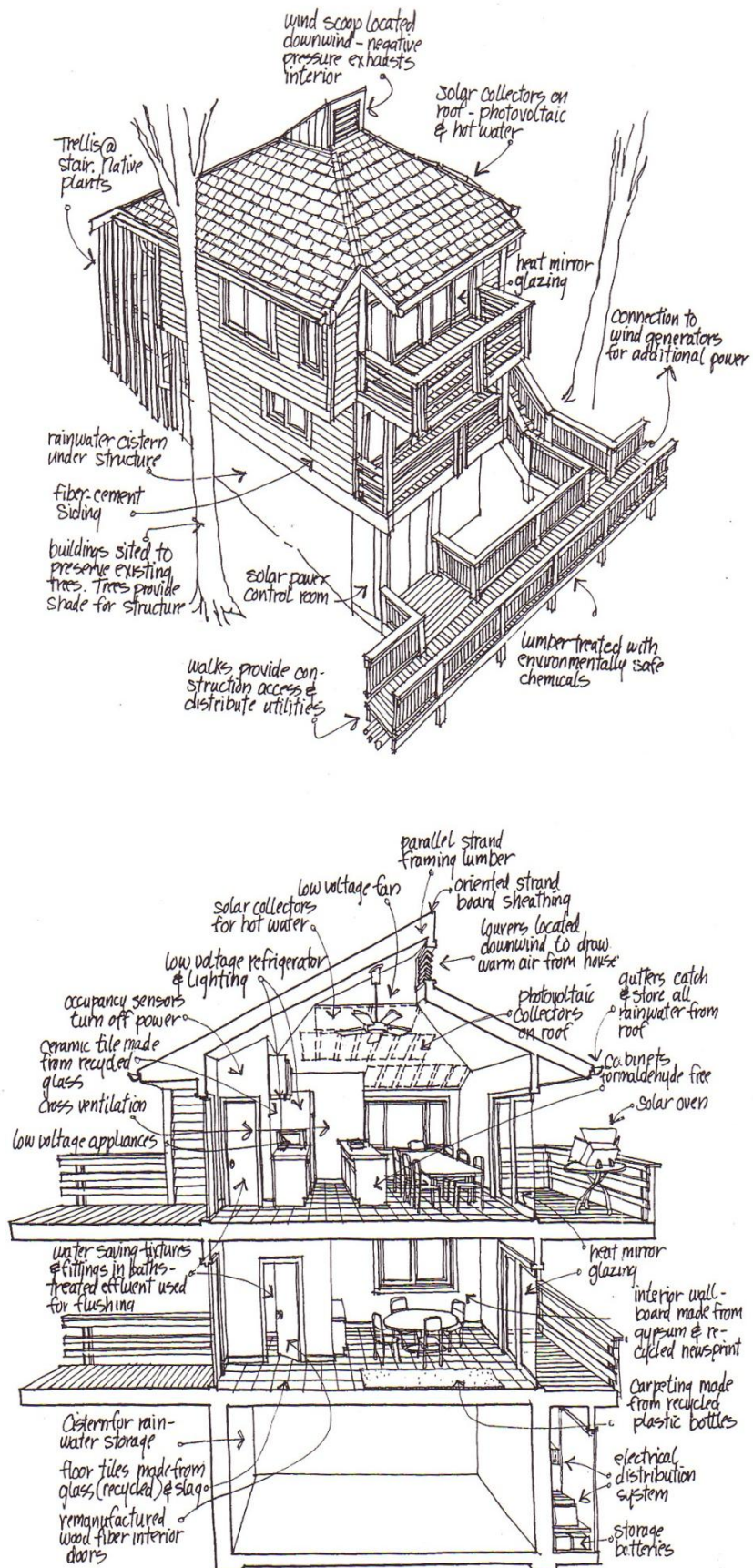


In the middle of the 20th century, architects introduced American suburbs to Modernism, a style of architecture influenced by Wright's organic designs, the International Style, and the German Bauhaus. Featuring bands of floor-to-ceiling windows and open floor plans that connected the interior spaces to the outdoors, Modernism was ideally suited to the sunny

California climate. California Modernism flourished in the developing desert community of Palm Springs, which is home to many mid-20th century modern classic homes and buildings by the architects Albert Frey (above left), Donald Wexler, and Richard Neutra (right).



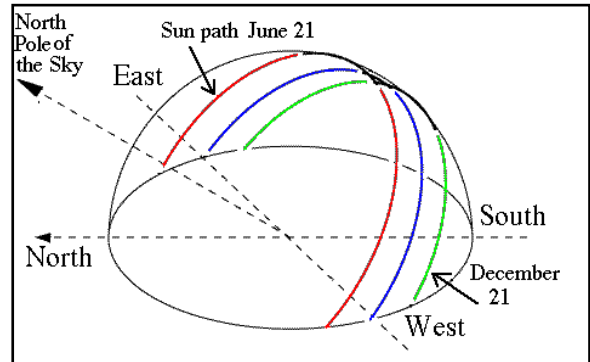
ENVIRONMENTAL DESIGN ELEMENTS:



Wind Power. The wind farm in the San Gorgonio Mountain pass provides enough electricity for Palm Springs and the entire Coachella Valley. Each of the 4,000 windmills produces 300 kilowatts of power by transforming the kinetic energy of the wind into mechanical or electrical energy. The windmills require an average wind speed of at least 13 mph. The largest stands 150 feet tall, weighs 45,000 pounds, and costs approximately \$300,000.

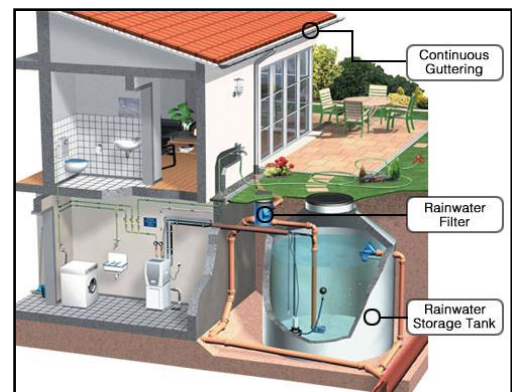


Sun Path. The sun rises in the east and sets in the west. The south side of the building receives the most sun, with the north wall not receiving direct sunlight. In the summer, the sun's path is longest, and so are the days. In the winter, the sun's path is shortest, and so are the days.



Rainwater Harvesting & Greywater Systems

Rainwater that lands on a home's roof is collected in roof gutters and downspouts that divert the water to filtration device before it arrives in a cistern, which is located either above or below ground. The stored water can be pressurized and piped to an irrigation system for landscaping. In an approved greywater system, water used by clothes washers and bathroom sinks and showers is diverted through a filtering system and reclaimed for landscape irrigation.



Recycled Materials. The best way to reduce the energy used for production of construction materials and the negative impact waste disposal has on the environment is to re-use more and recycle everything possible. Recycled-content materials such as roofing, gypsum board, siding, and even paint are readily available.

Composting is the process of speeding up the decaying of organic matter for use as garden soil.



LINKS:

Composting

<http://www.howtocompost.org/>

<http://www.nrcs.usda.gov/FEATURE/backyard/compost.html>

Green Building

U.S. Green Building Council www.usgbc.org

California Integrated Waste Management Board

<http://www.ciwmb.ca.gov/greenbuilding>

Energy Efficiency & Renewable Energy

U.S. Department of Energy www.eere.energy.gov

Maps

U.S. Geologic Survey - Site Information

<http://nmviewogc.cr.usgs.gov/viewer.htm>

Solar Water Heating

http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12890

Sun Path Diagrams

<http://solardat.uoregon.edu/SunChartProgram.html>

http://squl.org/wiki/Sun_Path_Diagram

Recycled Materials

California Integrated Waste Management Board

<http://www.ciwmb.ca.gov/greenbuilding/Materials/>

Water Conservation

Metropolitan Water District <http://www.bewaterwise.com/>

<http://www.mwdh2o.com/mwdh2o/pages/education/h2o/9-12.html>

Rainwater Harvesting & Greywater Systems

<http://www.h2ouse.org/tour/rain-harvesting.cfm>

Greywater Systems

<http://www.greywater.com/>

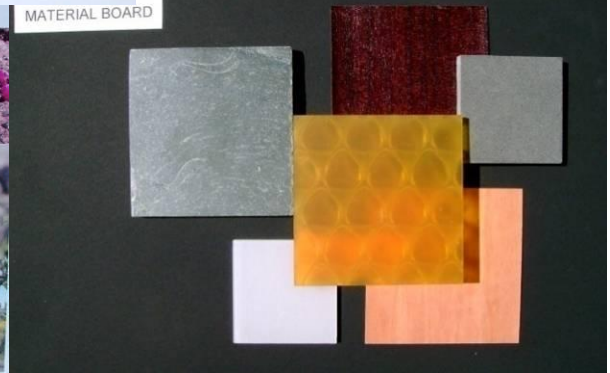
Wind Energy

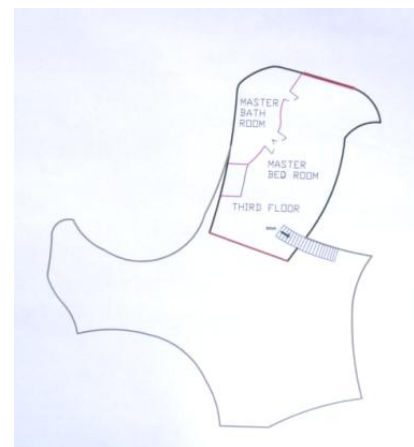
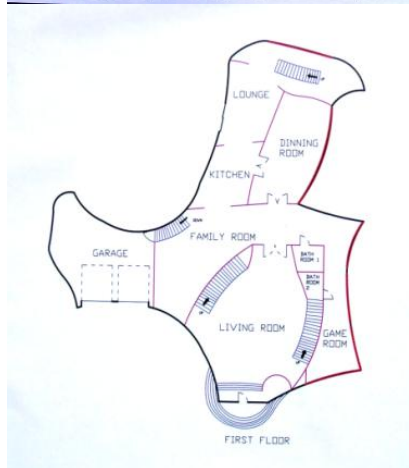
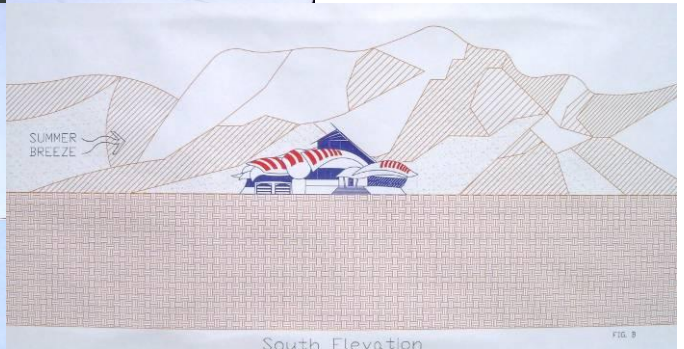
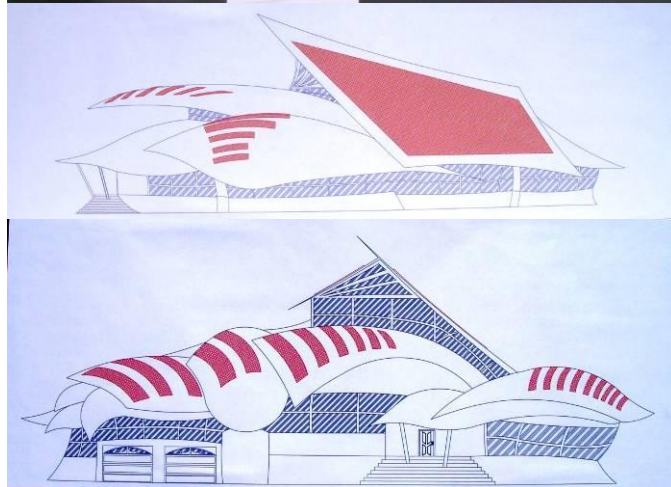
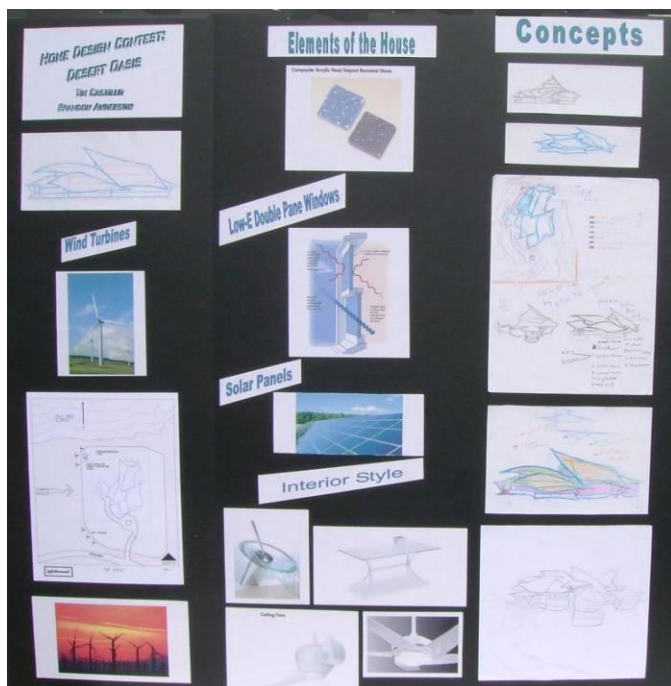
Energy Information Association

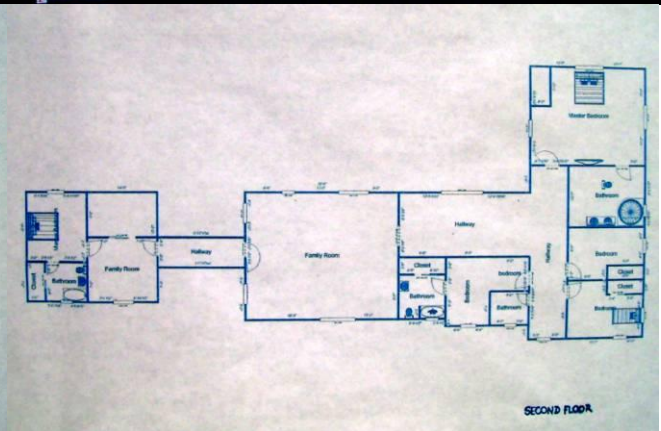
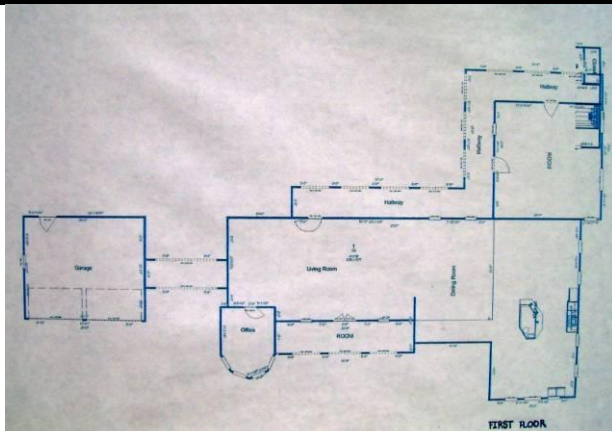
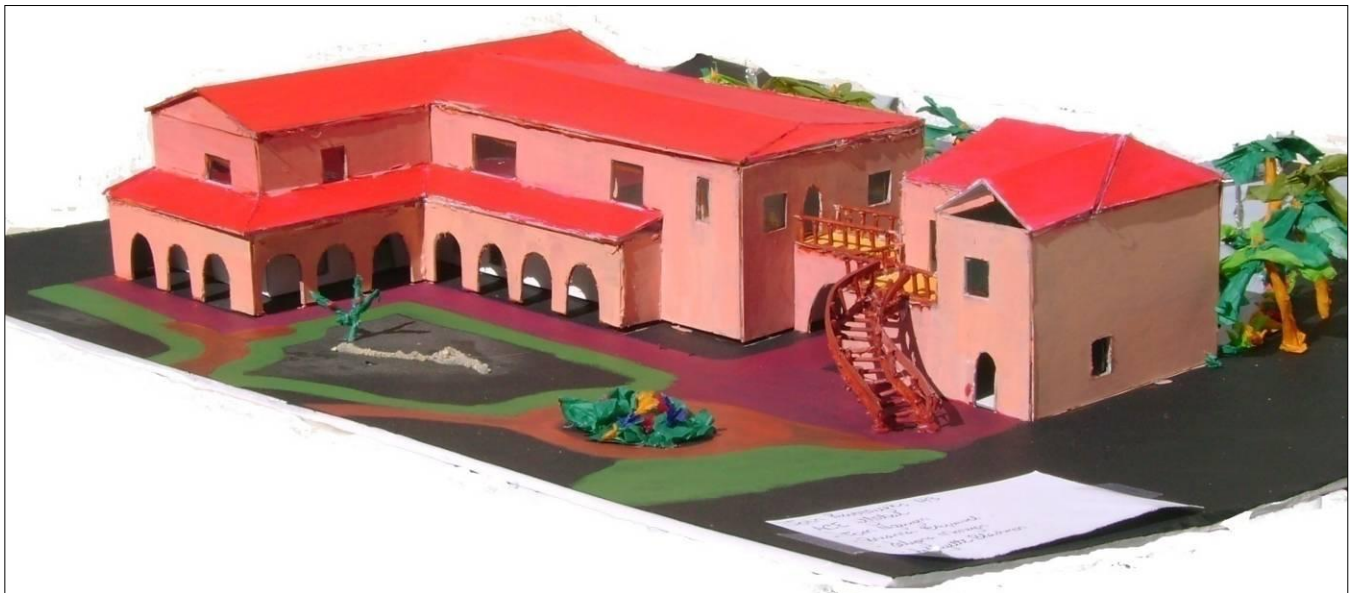
http://tonto.eia.doe.gov/kids/energy.cfm?page=wind_home-basics

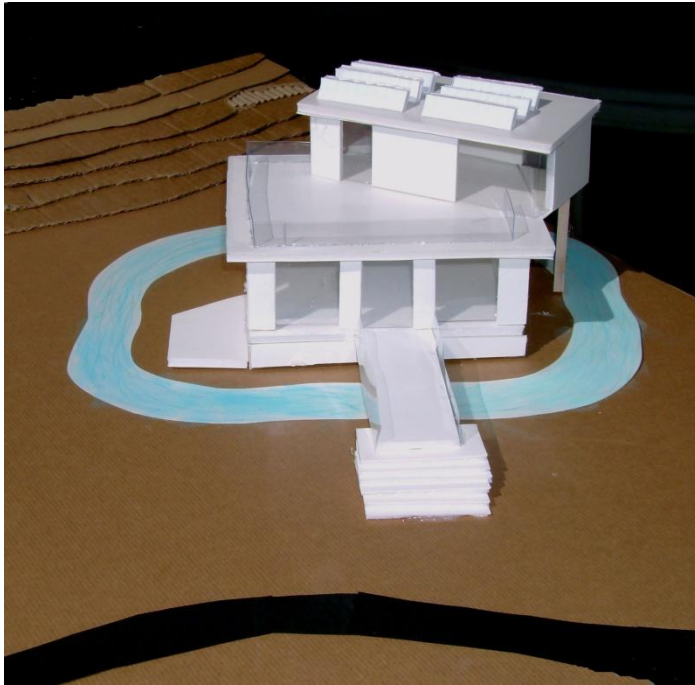
Wind Energy Association <http://www.awea.org/faq/>

PAST WINNERS: These are winning Desert House entries from previous years:









Modern oasis

HeeSoo Kim

House Summary

This beautiful, modern looking house is a one great place to spend precious time with your own loving family and/or friends. For its sides are surrounded by sparkling water, create fresh and lovely view from inside. The first floor consists of entertaining room, kitchen and dining, bar, guest room, and resting room. Some parts of the first floor is clear, making it possible to see the pond in the bottom of the house.

Most of the house's bedrooms are placed on the second floor, with huge windows for you to feel the great fresh feelings every morning. The second floor also includes two bathrooms for family, roof terrace, roof pool and spa, and a family living room. It focuses on family fun. These are all the areas the house has; however, we have not gone to the exciting features of this house yet.

The greatness about this house is that this house hardly uses the natural energy resources that are provided by the state, because it makes its own to run things in the house. And because desert usually has many sunny days, you do not have to worry about electric bills. And this is why there are solar panels on the roof of the house. Plus, the house is made out of stone for it to warm-up slowly and cool-down slowly for the desert's characteristic — extreme temperature difference between day and night.

Materials To Be Used

Floor Plans

ROOM VIEWS